AMENDMENTS TO THE CLAIMS

1. (Previously presented) A method for modulation, comprising the steps of:

regularly subjecting an input digital signal to first modulation and second modulation to convert the input digital signal into a pair of a baseband I signal and a baseband Q signal, the first modulation and the second modulation being different from each other; and

outputting the pair of the baseband I signal and the baseband Q signal;

wherein the first modulation is at least 8-signal-point modulation, and the second modulation is phase shift keying;

wherein the phase shift keying provides periodically-spaced symbols which represent corresponding portions of the input digital signal in terms of differences between phases of the periodically-spaced symbols; and

wherein the at least 8-signal-point modulation assigns logic states of the input digital signal to respective signal points for a first symbol in response to a signal point used by a second symbol of the phase shift keying which precedes the first symbol.

2. Cancelled.

3. (Previously presented) A method as recited in claim 1, wherein the phase shift keying is quadrature phase shift keying.

4. (Previously presented) A method as recited in claim 3, wherein the quadrature phase shift keying provides signal points on an I axis and a Q axis in an I-Q plane.

5. (Previously presented) A method as recited in claim 1, wherein the at least 8-signal-point modulation is at least 8 quadrature amplitude modulation.

6. (Original) A method as recited in claim 4, wherein the at least 8-signal-point modulation is at least 8 quadrature amplitude modulation.

7. (Previously presented) A method as recited in claim 5, wherein at least 8 quadrature amplitude modulation is 16 quadrature amplitude modulation.

8. (Original) A method as recited in claim 6, wherein the at least 8 quadrature amplitude modulation is 16 quadrature amplitude modulation.

9. (Original) A method as recited in claim 5, wherein the at least 8 quadrature amplitude modulation provides signal points which result from rotation of signal points of at least 8-value normal quadrature amplitude modulation through an angle of $\pi/4$ radian about an origin in an I-Q plane.

10. (Original) A method as recited in claim 6, wherein the at least 8 quadrature amplitude modulation provides signal points which result from rotation of signal points of at least 8-value normal quadrature amplitude modulation through an angle of $\pi/4$ radian about an origin in an I-Q plane.

11. (Original) A method as recited in claim 7, wherein the 16 quadrature amplitude modulation provides signal points which result from rotation of signal points of 16-value normal quadrature amplitude modulation through an angle of $\pi/4$ radian about an origin in an I-Q plane.

12. (Original) A method as recited in claim 8, wherein the 16 quadrature amplitude modulation provides signal points which result from rotation of signal points of 16-value normal quadrature amplitude modulation through an angle of $\pi/4$ radian about an origin in an I-Q plane.

13. (Previously presented) A method as recited in claim 1, wherein a maximum of amplitudes corresponding to signal points of the at least 8-signal-point modulation in an I-Q plane is equal to an amplitude of a signal point of the phase shift keying in the I-Q plane.

Claims 14-32 Cancelled.

33. (Previously presented) A transmission apparatus comprising:

first means for periodically and alternately subjecting an input digital signal to first modulation and second modulation to convert the input digital signal into a pair of a baseband I signal and a baseband Q signal, the first modulation and the second modulation being different from each other, the first modulation being at least 8-signal-point modulation, the second modulation being phase shift keying;

second means for outputting the pair of the baseband I signal and the baseband Q signal;

wherein the phase shift keying provides periodically-spaced symbols which represent corresponding portions of the input digital signal in terms of differences between phases of the periodically-spaced symbols;

wherein the at least 8-signal-point modulation assigns logic states of the input digital signal to respective signal points for a first symbol in response to a signal point used by a second symbol of the shift keying which precedes the first symbol; and

wherein said first symbol is demodulated by using said second symbol which is not a known prescribed pattern but a part of information transmitted by said transmission apparatus.

Claims 34-36 Cancelled.

37. (Previously presented) A transmission apparatus as recited in claim 33, wherein the symbols provided by the phase shift keying are used as a pilot symbol for estimating at least one of (1) a transmission path distortion and (2) a frequency offset.

Claims 38–73 Cancelled.